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Attorney Docket No.: 02307W-

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July 6, 200 5

TOWNSEND and TOWNSEND and CREW LLP

D. 1.

Mark T. Davis

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Kit S. Lam, et al.

Application No.: 10/811,331

Filed: March 25, 2004

For: A NOVEL ENCODING METHOD FOR "ONE-BEAD ONE-COMPOUND"

COMBINATORIAL LIBRARIES

Examiner: To Be Assigned

Art Unit: 1639

INFORMATION DISCLOSURE

STATEMENT UNDER 37 CFR §1.97 and

§1.98

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. In accordance with the Office's amendment to Section 1.98(a)(2), announced in the Federal Register of September 21, 2004 (Vol. 69, No. 182), copies of the cited U.S. patents and patent applications are not enclosed. Copies of all other references are submitted herewith. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

PATENT

Kit S. Lam, et al.

Application No.: 10/811,331

Page 2

Also enclosed is a copy of the Search/Examination report corresponding to the related PCT application.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that <u>no fee is required</u> for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

MOLNL

Mark H. Hopkins Reg. No. 44,775

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Tel: 925-472-5000 Fax: 925-472-8895 M3H:jvl:mtd

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U.S. PATENT DOCUMENTS+							
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Examiner Initials*	Cite No.1	Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
	1.	5,504,265 A	04-02-1996	Krespan et al.			
	2.	5,510,240 A	04-23-1996	Lam et al.			
	3.	5,650,489 A	07-22-1997	Lam et al.			
	4.	5,840,485 A	11-24-1998	Lebl et al.			
							

	FOREIGN PATENT DOCUMENTS							
Examiner	Cite	For	eign Patent Doc	ument	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant	
Initials*	No. ¹	Country Code ³	Number⁴	Kind Code ⁵ (if known)	MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear	T ⁶
	5.	wo	90/09395	A1	08-23-1990	Geysen		
	6.	wo	92/18144	A1	10-29-1992	Lebi		
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Examiner Signature	Date Considered	

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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	7.	AFFLECK, R.L., "Solutions for library encoding to create collections of discrete compounds" Curr. Opin. Chem. Biol. 5:257-263 (2001)	
	8.	ATHERTON, E., et al., "Peptide synthesis. Part 2. Procedures for solid-phase synthesis using N ^a -fluorenylmethoxycarbonylamino-acids on polyamide supports. Synthesis of substance P and of acylcarrier protein 65-74 decapeptide" J. Chem. Soc. Perkin I: 538-546 (1981)	
	9.	BALEAUX, F., et al., "Glycolamidic ester group as labile linkage in solid phase peptide synthesis: use with Fmoc-protected amino acids" Int. J. Pept. Protein Res. 28:22-28 (1986)	
	10.	BARANY, G., et al., "A three-dimensional orthogonal protection scheme for solid-phase peptide synthesis under mild conditions" J. Am. Chem. Soc. 107:4936 (1985)	
	11.	BARNES, C., et al., "Recent developments in the encoding and deconvolution of combinatorial libraries" Curr. Opin. Chem. Biol. 4:346-350 (2000)	
	12.	BENNETT, W.D., et al. (Eds.), in <u>Advanced Chemtech Handbook of Combinatorial and Solid-Phase Organic Chemistry a Guide To Principles, Products and Protocols, Advanced ChemTech Inc., Louisville, KY, p. 330 (1998)</u>	
	13.	BIEMANN, K., et al., "Mass spectrometric determination of the amino acid sequence of peptides and proteins" Mass Spectrom. Rev. 6:1-76 (1987)	
	14.	CARRASCO, M.R., et al., "Direct monitoring of organic reactions on polymeric supports" Tetrahedron Lett. 38:6331-6334 (1997)	
	15.	CHAIT, B., et al., "Protein ladder sequencing" Science 262:89-92 (1995)	
	16.	CZARNIK, A.W., "Encoding methods for combinatorial chemistry" Curr. Opin. Chem. Biol. 1:60-66 (1997)	
	17.	EGNER, B.J., et al., "Solid phase chemistry: direct monitoring by matrix-assisted laser desorption/ionization time of flight mass spectrometry. A tool for combinatorial chemistry" J. Org. Chem. 60:2652-2653 (1995)	
•	18.	FIELDS, G.B., et al., "Solid phase peptide synthesis utilizing 9-fluorenylmethoxycarbonyl amino acids" Int. J. Peptide Protein Res. 35:161-214 (1990)	
	19.	FITZGERALD, M.C., et al., "Direct characterization of solid phase resin-bound molecules by mass spectrometry" Bioorg. Med. Chem. Lett. 6:979-982 (1996)	
	20.	FURKA, A., et al., Int. J. Peptide Protein Res. 37:487-493 (1991)	
	21.	GEYSEN, H.M., et al., "Isotope or mass encoding of combinatorial libraries" Chem. Biol. 3:679-688 (1996)	

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Examiner		Date	
Signature		Considered	·

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

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Substitute	for form 1449B/PTC)		Complete if Known		
INITO		DIO	01.0011DE	Application Number	10/811,331	
	INFORMATION DISCLOSURE			Filing Date	March 25, 2004	
STAT	EMENT B	ΥA	PPLICANT	First Named Inventor Lam, Kit S.		
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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	22.	GRIECO, P., et al., "Preparation of 'side-chain-to-side-chain' cyclic peptides by allyl and alloc strategy: potential for library synthesis" J. Peptide Res. 57:250-256 (2001)	
	23.	GROSS, E., et al., "Nonenzymatic cleavage of peptide bonds: The methionine residues in bovine pancreatic ribonuclease" J. Biol. Chem. 237:1856-1860 (1962)	
	24.	GUILES, J.W., et al., "A visual tagging process for mix and sort combinatorial chemistry" Angew. Chem. Int. Ed. 37:926-928 (1998)	
	25.	HAMMER et al., "Practical approach to solid-phase synthesis of C-terminal peptide amides under mild conditions based on a photolysable anchoring linkage" Int. J. Pept. Protein Res. 36:31 (1990)	
	26.	HASKINS, N.J., et al., "Combinatorial chemistry: direct analysis of bead surface associated materials" Rapid Commun. Mass Spectrom. 9:1437-1440 (1995)	
	27.	HOUGHTEN, R. A., et al., Generation and use of synthestic peptide combinatorial libraries for basic research and drug discovery" Nature 354:84-86 (1991)	
	28.	KAISER, E., et al., "Color test for detection of free terminal amino groups in the solid-phase synthesis of peptides" Anal. Biochem., 34:595-598 (1970)	
	29.	KERR, J.M., et al., "Encoded combinatorial peptide libraries containing non-natural amino acids" J. Am. Chem. Soc. 115:2529-2531 (1993)	
	30.	KNEIB-CORDONIER, N., et al., "Orthogonal solid-phase synthesis of human gastrin-I under mild conditions" in Peptides-Chemistry, Structure and Biology, Rivier and Marshall (Eds.), pp. 895-897 (1990)	
	31.	LAM, K.S., et al., "A new type of synthetic peptide library for identifying ligand-binding activity" Nature 354:82-84 (1991)	
	32.	LAM, K.S., et al., "The "one-bead-one-compound" combinatorial library method" Chem. Rev. 97:411-448 (1997)	
	33.	LANDEN, M., "Cleavage at aspartyl-prolyl bonds" Methods Enzym., 47:145 (1977)	
	34.	LANE, S.J., et al., "Single bead and hard tag decoding using accurate isotopic difference target analysis-encoded combinatorial libraries" Rapid Commun. Mass Spectrom. 14:782-793 (2000)	
	35.	LEBL, M., et al., "One-bead-one-structure combinatorial libraries" Biopolymers 37:177-198 (1995)	
	36.	L1, W., et al., "Kinetic study of organic reactions on polystyrene grafted microtubes" J. Comb. Chem., 2:224-227 (2000)	

Examiner	Date	
Signature	Considered	·

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute	for form 1449B/PTC)	•	Complete if Known		
		DIA	01.001105	Application Number	10/811,331	
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	37.	LIU, R., et al., "A novel peptide-based encoding system for "one-bead one-compound" peptidomimetic and small molecule combinatorial libraries" J. Am. Chem. Soc. 124:7678-7680 (2002)	
	38.	LORTHIOIR, O., et al., "Single bead characterization using analytical constructs: application to quality control of libraries" Anal. Chem. 73:963-970 (2001)	
	39.	MAEJI, N., "Multi-pin peptide synthesis strategy for T cell determinant analysis" et al., J. Immunol. Methods 134: 23-33 (1990)	
	40.	MORAN, E.J., et al., "Radio frequency tag encoded combinatorial library method for the discovery of tripeptide- substituted cinnamic acid inhibitors of the protein tyrosine phosphatase PTP1B" J. Am. Chem. Soc. 117:10787- 10788 (1995)	
	41.	MURPHY, M.M., et al., "Combinatorial organic synthesis of highly functionalized pyrrolidines: Identification of a potent angiotensin converting enzyme inhibitor from a mercaptoacyl praline library" J. Am. Chem. Soc. 117:7029-7030 (1995)	
	42.	NESTLER, H.P., et al., "A general method for molecular tagging of encoded combinatorial chemistry libraries" J. Org. Chem. 59:4723-4724 (1994)	
	43.	NI, Z.J., et al., "Versatile approach to encoding combinatorial organic syntheses using chemically robust secondary amine tags" J. Med. Chem. 39:1601-1608 (1996)	
	44.	NICOLAOU, K.C., et al., "Radiofrequency encoded combinatorial chemistry" Angew. Chem., Int. Ed. Engl. 34:2289-2291 (1995)	
	45.	NIKOLAIEV, V., et al., "Peptide-encoding for structure determination of nonsequence-able polymers within libraries synthesized and tested on solid-phase supports" Peptide Res. 6:161-170 (1993)	
	46.	OHLMEYER, M.H.J., et al., "Complex synthetic chemical libraries indexed with molecular tags" Proc. Natl. Acad. Sci. USA 90:10922-10926 (1993)	
	47.	PATCHORNIK, A., et al., "Photosensitive protecting groups" J. Am. Chem. Soc. 92:6333 (1970)	
	48.	PATEK, M., et al., "Safety-catch anchoring linkage for synthesis of peptide amides by Boc/Fmoc strategy" Tetrahedron Letters 32:3891 (1991)	
	49.	SIUZDAK, G., et al., "Applications of mass spectrometry in combinatorial chemistry" Biotechnol. Bioeng. 61:127-134 (1998)	
	50.	SONG, A., et al., "A novel and rapid encoding method based on mass spectrometry for "one-bead one-compound" small molecule combinatorial libraries" J. Am. Chem. Soc. 125:6180-6188 (2003)	
	51.	VAINO, A.R., et al., "Euclidean shape-encoded combinatorial chemical libraries" Proc. Natl. Acad. Sci. 97:7692-7696 (2000)	

xaminer	Date	
ignature	Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	52.	VAN DER ZEE, R., et al., "Efficient mapping and characterization of a T cell epitope by the simultaneous synthesis of multiple peptides" Eur. J. Immunol. 191: 43-47 (1989)				
	53.	WAGNER, D.S., et al., "Ratio encoding combinatorial libraries with stable isotopes and their utility in pharmaceutical research" Comb. Chem. High Throughput Screening 1:143-153 (1998)				
	54.	WANG, S., "Solid phase synthesis of protected peptides via photolytic cleavage of the α-methylphenacyl ester anchoring linkage"J.Org. Chem. 41:3258-3261 (1976)				
	55.	XIAO, X.Y., "Encoded combinatorial chemistry: development and application" Front. Biotechnol. Pharm. 1:114-149 (2000)				
	56.	YOUNGQUIST, R.S., et al., "Matrix-assisted laser desorption ionization for rapid determination of the sequences of biologically active peptides isolated from support-bound combinatorial peptide libraries" Rapid Commun. Mass Spectrom. 8:77-81 (1994)				
	57.	YOUNGQUIST, R.S., et al., "Generation and screening of combinatorial peptide libraries designed for rapid sequencing by mass spectrometry" J. Am. Chem. Soc. 117:3900-3906 (1995)				
	58.	ZHAO, Z.G., et al., "Site-specific modification of a single-chain antibody using a novel glyoxylyl-based labeling reagent" Bioconjugate Chem. 10:242-430 (1999)				

Examiner	Date	
Signature	Considered	

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